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LAMPIRAN

Lampiran 1. Data polusi udara harian *particular matter* di Kota Jakarta.

N	Tanggal	PM 10	PM 2.5	N	Tanggal	PM 10	PM 2.5	N	Tanggal	PM 10	PM 2.5
1	01/01/2021	38	53	31	31/01/2021	36	51	61	02/03/2021	38	55
2	02/01/2021	27	46	32	01/02/2021	59	79	62	03/03/2021	49	67
3	03/01/2021	44	58	33	02/02/2021	30	46	63	04/03/2021	51	75
4	04/01/2021	30	48	34	03/02/2021	23	33	64	05/03/2021	52	69
5	05/01/2021	38	53	35	04/02/2021	36	53	65	06/03/2021	51	73
6	06/01/2021	41	58	36	05/02/2021	29	36	66	07/03/2021	57	88
7	07/01/2021	35	47	37	06/02/2021	27	34	67	08/03/2021	47	63
8	08/01/2021	37	54	38	07/02/2021	25	51	68	09/03/2021	36	50
9	09/01/2021	47	61	39	08/02/2021	24	79	69	10/03/2021	45	65
10	10/01/2021	23	25	40	09/02/2021	33	46	70	11/03/2021	27	35
11	11/01/2021	38	54	41	10/02/2021	32	33	71	12/03/2021	44	58
12	12/01/2021	29	50	42	11/02/2021	26	59	72	13/03/2021	37	62
13	13/01/2021	34	44	43	12/02/2021	41	41	73	14/03/2021	39	60
14	14/01/2021	36	57	44	13/02/2021	25	38	74	15/03/2021	45	70
15	15/01/2021	42	62	45	14/02/2021	33	45	75	16/03/2021	55	80
16	16/01/2021	52	73	46	15/02/2021	34	67	76	17/03/2021	59	93
17	17/01/2021	52	71	47	16/02/2021	26	64	77	18/03/2021	64	102
18	18/01/2021	40	52	48	17/02/2021	39	42	78	19/03/2021	60	88
19	19/01/2021	31	41	49	18/02/2021	43	48	79	20/03/2021	55	80
20	20/01/2021	35	34	50	19/02/2021	29	38	80	21/03/2021	43	55
21	21/01/2021	43	51	51	20/02/2021	30	67	81	22/03/2021	38	61
22	22/01/2021	49	63	52	21/02/2021	31	60	82	23/03/2021	37	54
23	23/01/2021	72	108	53	22/02/2021	51	60	83	24/03/2021	32	53
24	24/01/2021	33	48	54	23/02/2021	50	55	84	25/03/2021	25	47
25	25/01/2021	56	82	55	24/02/2021	30	67	85	26/03/2021	50	69
26	26/01/2021	52	70	56	25/02/2021	31	75	86	27/03/2021	53	71
27	27/01/2021	20	20	57	26/02/2021	29	69	87	28/03/2021	54	75
28	28/01/2021	27	41	58	27/02/2021	49	73	88	29/03/2021	55	77
29	29/01/2021	30	53	59	28/02/2021	43	88	89	30/03/2021	53	69
30	30/01/2021	27	37	60	01/03/2021	37	63	90	31/03/2021	43	57
:	:	:	:	:	:	:	:	:	:	:	:
1291	14/07/2024	59	83	1297	20/07/2024	60	84	1303	26/07/2024	59	84
1292	15/07/2024	58	85	1298	21/07/2024	59	87	1304	27/07/2024	64	94
1293	16/07/2024	58	92	1299	22/07/2024	59	79	1305	28/07/2024	64	102
1294	17/07/2024	59	88	1300	23/07/2024	63	92	1306	29/07/2024	63	90
1295	18/07/2024	63	91	1301	24/07/2024	75	99	1307	30/07/2024	63	96
1296	19/07/2024	58	84	1302	25/07/2024	61	83	1308	31/07/2024	69	105

Lampiran 2. Hasil perhitungan cost total medoid awal, baru dan iterasi pertama.

• Medoid awal

Tanggal	PM 10	PM 2.5	Jarak Total <i>Medoid</i> Awal					Kedekatan
			<i>Cost1</i>	<i>Cost2</i>	<i>Cost3</i>	<i>Cost4</i>	<i>Cost5</i>	
01/01/2021	38	53	10,82	12,81	30,81	49,09	71,34	10,82
02/01/2021	27	46	5,39	25,50	43,19	61,22	83,23	5,39
03/01/2021	44	58	18,44	5,39	23,32	41,68	64,01	5,39
04/01/2021	30	48	4,47	21,93	39,70	57,80	79,88	4,47
05/01/2021	38	53	10,82	12,81	30,81	49,09	71,34	10,82
06/01/2021	41	58	16,64	7,07	25,00	43,27	65,51	7,07
07/01/2021	35	47	4,24	19,42	37,44	55,76	78,03	4,24
08/01/2021	37	54	11,18	12,73	30,61	48,83	71,02	11,18
09/01/2021	47	61	22,67	2,24	19,24	37,59	59,94	2,24
10/01/2021	23	25	21,02	44,42	62,43	80,78	103,08	21,02
11/01/2021	38	54	11,66	12,04	30,00	48,26	70,49	11,66
12/01/2021	29	50	6,71	21,40	38,90	56,85	78,82	6,71
13/01/2021	34	44	2,00	22,47	40,50	58,83	81,12	2,00
14/01/2021	36	57	13,60	11,66	29,00	47,01	69,07	11,66
15/01/2021	42	62	20,59	4,12	21,26	39,41	61,59	4,12
16/01/2021	52	73	35,23	11,66	6,40	24,70	47,01	6,40
17/01/2021	52	71	33,60	10,00	8,06	26,42	48,76	8,06
18/01/2021	40	52	11,31	12,53	30,53	48,88	71,20	11,31
19/01/2021	31	41	3,16	26,63	44,65	62,97	85,23	3,16
20/01/2021	35	34	10,44	31,02	48,75	67,08	89,44	10,44
21/01/2021	43	51	13,04	12,37	29,97	48,30	70,66	12,37
22/01/2021	49	63	25,50	3,00	16,55	34,89	57,25	3,00
23/01/2021	72	108	75,47	51,97	34,00	15,65	6,71	6,71
24/01/2021	33	48	4,12	19,85	37,80	56,04	78,23	4,12
25/01/2021	56	82	44,94	21,47	4,00	15,00	37,22	4,00
26/01/2021	52	70	32,80	9,22	8,94	27,29	49,65	8,94
27/01/2021	20	20	26,83	50,25	68,26	86,61	108,91	26,83
28/01/2021	27	41	5,83	29,07	47,01	65,22	87,37	5,83
29/01/2021	30	53	9,22	18,87	36,07	53,91	75,80	9,22
30/01/2021	27	37	8,60	32,20	50,22	68,51	90,74	8,60
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
28/07/2024	64	102	66,24	42,95	25,30	8,06	16,28	8,06
29/07/2024	63	90	55,47	31,91	13,89	4,47	26,83	4,47
30/07/2024	63	96	60,54	37,12	19,31	2,83	21,63	2,83
31/07/2024	69	105	71,34	47,89	29,97	11,70	10,82	10,82
Cost Total								9.168,09

- Medoid baru

Tanggal	PM 10	PM 2.5	Jarak Total <i>Medoid</i> Baru					Kedekatan
			<i>Cost1</i>	<i>Cost2</i>	<i>Cost3</i>	<i>Cost4</i>	<i>Cost5</i>	
01/01/2021	38	53	10,82	12,81	30,00	46,32	76,16	10,82
02/01/2021	27	46	5,39	25,50	42,45	58,41	87,92	5,39
03/01/2021	44	58	18,44	5,39	22,47	38,95	68,88	5,39
04/01/2021	30	48	4,47	21,93	38,95	55,00	84,60	4,47
05/01/2021	38	53	10,82	12,81	30,00	46,32	76,16	10,82
06/01/2021	41	58	16,64	7,07	24,21	40,50	70,33	7,07
07/01/2021	35	47	4,24	19,42	36,62	53,00	82,86	4,24
08/01/2021	37	54	11,18	12,73	29,83	46,04	75,80	11,18
09/01/2021	47	61	22,67	2,24	18,36	34,89	64,85	2,24
10/01/2021	23	25	21,02	44,42	61,59	78,03	107,91	21,02
11/01/2021	38	54	11,66	12,04	29,21	45,49	75,29	11,66
12/01/2021	29	50	6,71	21,40	38,18	54,04	83,49	6,71
13/01/2021	34	44	2,00	22,47	39,66	56,08	85,96	2,00
14/01/2021	36	57	13,60	11,66	28,28	44,20	73,78	11,66
15/01/2021	42	62	20,59	4,12	20,52	36,62	66,37	4,12
16/01/2021	52	73	35,23	11,66	5,66	21,95	51,88	5,66
17/01/2021	52	71	33,60	10,00	7,21	23,71	53,67	7,21
18/01/2021	40	52	11,31	12,53	29,68	46,14	76,06	11,31
19/01/2021	31	41	3,16	26,63	43,83	60,21	90,05	3,16
20/01/2021	35	34	10,44	31,02	47,85	64,40	94,37	10,44
21/01/2021	43	51	13,04	12,37	29,07	45,62	75,58	12,37
22/01/2021	49	63	25,50	3,00	15,65	32,20	62,17	3,00
23/01/2021	72	108	75,47	51,97	34,89	18,36	11,70	11,70
24/01/2021	33	48	4,12	19,85	37,01	53,25	83,01	4,12
25/01/2021	56	82	44,94	21,47	5,00	12,21	42,06	5,00
26/01/2021	52	70	32,80	9,22	8,06	24,60	54,56	8,06
27/01/2021	20	20	26,83	50,25	67,42	83,86	113,74	26,83
28/01/2021	27	41	5,83	29,07	46,23	62,43	92,11	5,83
29/01/2021	30	53	9,22	18,87	35,38	51,09	80,45	9,22
30/01/2021	27	37	8,60	32,20	49,41	65,73	95,52	8,60
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
28/07/2024	64	102	66,24	42,95	26,25	10,05	20,81	10,05
29/07/2024	63	90	55,47	31,91	14,76	2,00	31,78	2,00
30/07/2024	63	96	60,54	37,12	20,25	4,00	26,42	4,00
31/07/2024	69	105	71,34	47,89	30,87	14,32	15,65	14,32
Cost Total								9.035,22

- Medoid iterasi pertama

Tanggal	PM 10	PM 2.5	Jarak Total <i>Medoid</i> Iterasi Pertama					Kedekatan
			<i>Cost1</i>	<i>Cost2</i>	<i>Cost3</i>	<i>Cost4</i>	<i>Cost5</i>	
01/01/2021	38	53	2,24	9,90	23,43	41,05	65,37	2,24
02/01/2021	27	46	10,82	22,80	36,07	53,26	77,10	10,82
03/01/2021	44	58	10,00	2,24	15,81	33,62	58,14	2,24
04/01/2021	30	48	7,21	19,21	32,53	49,82	73,78	7,21
05/01/2021	38	53	2,24	9,90	23,43	41,05	65,37	2,24
06/01/2021	41	58	7,81	4,47	17,69	35,23	59,54	4,47
07/01/2021	35	47	5,10	16,40	30,00	47,71	72,07	5,10
08/01/2021	37	54	2,24	10,00	23,35	40,80	65,00	2,24
09/01/2021	47	61	14,21	2,24	11,66	29,53	54,13	2,24
10/01/2021	23	25	29,97	41,34	54,92	72,72	97,13	29,97
11/01/2021	38	54	2,83	9,22	22,67	40,22	64,50	2,83
12/01/2021	29	50	7,28	18,87	31,89	48,92	72,67	7,28
13/01/2021	34	44	8,25	19,42	33,02	50,77	75,18	8,25
14/01/2021	36	57	5,00	9,49	22,02	39,05	62,97	5,00
15/01/2021	42	62	11,66	3,61	14,21	31,40	55,57	3,61
16/01/2021	52	73	26,40	14,76	2,24	16,64	41,15	2,24
17/01/2021	52	71	24,84	13,04	1,00	18,36	42,95	1,00
18/01/2021	40	52	4,00	9,43	23,02	40,82	65,30	4,00
19/01/2021	31	41	12,08	23,60	37,20	54,92	79,26	12,08
20/01/2021	35	34	18,03	27,86	41,15	59,03	83,67	18,03
21/01/2021	43	51	7,07	9,22	22,36	40,25	64,88	7,07
22/01/2021	49	63	17,03	5,00	8,94	26,83	51,48	5,00
23/01/2021	72	108	66,57	55,07	41,59	23,71	2,83	2,83
24/01/2021	33	48	5,00	16,97	30,48	48,01	72,20	5,00
25/01/2021	56	82	36,06	24,60	11,40	7,07	31,30	7,07
26/01/2021	52	70	24,08	12,21	1,41	19,24	43,86	1,41
27/01/2021	20	20	35,78	47,17	60,75	78,55	102,96	35,78
28/01/2021	27	41	14,21	26,17	39,70	57,20	81,30	14,21
29/01/2021	30	53	6,08	16,55	29,21	46,01	69,63	6,08
30/01/2021	27	37	17,49	29,21	42,80	60,46	84,72	17,49
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
28/07/2024	64	102	57,31	46,10	32,89	15,30	10,00	10,00
29/07/2024	63	90	46,62	34,99	21,47	3,61	21,19	3,61
30/07/2024	63	96	51,62	40,25	26,93	9,22	15,65	9,22
31/07/2024	69	105	62,43	51,00	37,58	19,70	5,10	5,10
Cost Total							9.908,02	

Lampiran 3. Hasil peramalan *hybrid clustering large application* dan *fuzzy timeseries markov chain* pada peramalan polusi udara *particular matter* di Kota Jakarta.

N	Tanggal	PM 10	Fuzzi fikasi	FLR	$F(t)$	$\hat{F}(t)$	PM 2.5	Fuzzi fikasi	FLR	$F(t)$	$\hat{F}(t)$
1	01/01/2021	38	A1	NA → A1	0,00	0,00	53	A1	NA → A1	-	-
2	02/01/2021	27	A1	A1 → A1	42,78	31,78	46	A1	A1 → A1	59,13	52,13
3	03/01/2021	44	A2	A1 → A2	40,46	57,46	58	A2	A1 → A2	59,08	71,08
4	04/01/2021	30	A1	A2 → A1	46,27	32,27	48	A1	A2 → A1	62,07	52,07
5	05/01/2021	38	A1	A1 → A1	38,14	46,14	53	A1	A1 → A1	56,19	61,19
6	06/01/2021	41	A2	A1 → A2	43,78	46,78	58	A2	A1 → A2	61,74	66,74
7	07/01/2021	35	A1	A2 → A1	44,52	38,52	47	A1	A2 → A1	62,07	51,07
8	08/01/2021	37	A1	A1 → A1	41,04	43,04	54	A2	A1 → A2	59,46	66,46
9	09/01/2021	47	A2	A1 → A2	43,48	53,48	61	A2	A2 → A2	62,12	69,12
10	10/01/2021	23	A1	A2 → A1	48,01	24,01	25	A1	A2 → A1	63,83	27,83
11	11/01/2021	38	A1	A1 → A1	34,08	49,08	54	A2	A1 → A2	51,10	80,10
12	12/01/2021	29	A1	A1 → A1	42,78	33,78	50	A1	A2 → A1	59,72	55,72
13	13/01/2021	34	A1	A1 → A1	37,56	42,56	44	A1	A1 → A1	57,37	51,37
14	14/01/2021	36	A1	A1 → A1	40,46	42,46	57	A2	A1 → A2	58,32	71,32
15	15/01/2021	42	A2	A1 → A2	43,18	49,18	62	A2	A2 → A2	63,26	68,26
16	16/01/2021	52	A3	A2 → A3	49,14	59,14	73	A3	A2 → A3	73,74	84,74
17	17/01/2021	52	A3	A3 → A3	53,93	53,93	71	A3	A3 → A3	77,95	75,95
18	18/01/2021	40	A2	A3 → A2	48,01	36,01	52	A1	A3 → A1	69,71	50,71
19	19/01/2021	31	A1	A2 → A1	43,94	34,94	41	A1	A1 → A1	58,54	47,54
20	20/01/2021	35	A1	A1 → A1	38,72	42,72	34	A1	A1 → A1	52,07	45,07
21	21/01/2021	43	A2	A1 → A2	42,88	50,88	51	A1	A1 → A1	47,96	64,96
22	22/01/2021	49	A2	A2 → A2	45,29	51,29	63	A2	A1 → A2	60,98	72,98
23	23/01/2021	72	A5	A2 → A5	55,47	78,47	108	A5	A2 → A5	74,61	119,61
24	24/01/2021	33	A1	A5 → A1	62,52	23,52	48	A1	A5 → A1	91,47	31,47
25	25/01/2021	56	A3	A1 → A3	44,83	67,83	82	A3	A1 → A3	68,39	102,39
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
1303	26/07/2024	59	A3	A4 → A3	66,74	52,74	84	A3	A3 → A3	87,90	71,90
1304	27/07/2024	64	A4	A3 → A4	58,23	56,23	94	A4	A3 → A4	81,78	82,78
1305	28/07/2024	64	A4	A4 → A4	59,66	64,66	102	A4	A4 → A4	84,61	94,61
1306	29/07/2024	63	A4	A4 → A4	61,87	61,87	90	A4	A4 → A4	89,47	97,47
1307	30/07/2024	63	A4	A4 → A4	61,87	60,87	96	A4	A4 → A4	93,36	81,36
1308	31/07/2024	69	A4	A4 → A4	61,43	61,43	105	A4	A4 → A4	87,53	93,53
1309	01/08/2024	-	-	- - -	-	61,43	-	-	- - -	-	93,53

Lampiran 4. *Curriculum vitae*

A. Data Pribadi

- 1 Nama : Ankaz As Sikib
- 2 Tempat, tgl. lahir : Bau-bau, 11 Januari 2002
- 3 Alamat : Pondok 88, Perintis Kemerdekaan VII
- 4 Kewarganegaraan : Indonesia

B. Riwayat Pendidikan

- 1 Tamat SLTA tahun 2019 di SMAN 2 Buru
- 2 Sarjana (S1) tahun 2023 di Universitas Negeri Makassar
- 3 Magister (S2) tahun 2024 di Universitas Hasanuddin

C. Riwayat Pekerjaan

- Jenis Pekerjaan : Mitra Badan Pusat Statistik Kota Bau-bau
- NIK : 8104011101020002
- Jabatan : Pegawai Kontrak

D. Karya Ilmiah yang telah dipublikasi

- 1 Sikib, A. A., & Aswi, A. (2024). The Impact of Covid-19 on Stunting Cases in Indonesia: A Bayesian Spatial Modeling Approach. *Journal of Mathematics, Computations and Statistics*, 7(2), 427-436.

E. Makalah pada Seminar/Konferensi Ilmiah Nasional dan Internasional

- 1 Sikib et al. 2023. The Impact of COVID-19 on Stunting Cases in Indonesia: A Bayesian Spatial Modeling Approach. The 5th International Conference on Statistics, Mathematics, Teaching, and Research (ICSMTR) 2023, 9 Oct 2023. Makassar, Indonesia